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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/895,303      | 06/29/2001  | Paul F. Crowder      | G&C 122.6-US-U1     | 2396             |

22462 7590 03/13/2003

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EXAMINER

ZAHN, JEFFREY N

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

09/895,303

Applicant(s)

CROWDER ET AL.

Examiner

Jeffrey N Zahn

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-105 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-105 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.



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## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

**Claims 1-105 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Specifically, it is unclear/vague 1) what comprises the SGDBR laser as claimed; 2) the configuration of the front and back mirrors, ie. are they DBR's ?; 3) and, the relationship of the gain section to the remaining sections of the laser and if the claimed invention includes an active region separate from the gain section.

Regarding Claims 3-21, it is unclear/vague how the DSP is interrelated and functions with the other elements of the claim and 1) dithers the front and back mirror, 2) uses a least mean squares estimator, 3) uses a block LMS algorithm, etc..

Regarding Claims 22-34, it is unclear/vague 1) how the analog circuit interrelates with the other claimed elements to control, and 2) the relationships of the phase locker circuits to the claimed structure/laser.

Note: For purposes of examination, the claims are given the broadest reasonable interpretation; issues of indefiniteness, as discussed above, lessen the patentable weight of claimed elements/elemental structural relationships indicated as indefinite.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Claims 1-105 are rejected under 35 U.S.C. 102(a) as being anticipated by Sarlet et al. (Wavelength and Mode Stabilization of Widely Tunable SG-DBR and SSG-DBR Lasers).**

Regarding Claim 1, 35, 36, 70, 71 and 105, Sarlet et al. discloses a SGDBR controller that includes:

a controller (Fig. 2) for providing separate inputs to the laser including as front mirror current controlling a front mirror and a back mirror current controlling a back mirror to control the laser (Fig 2; see also page 1351-1352, section Voltage feedback Scheme); and

a voltage monitor, (Fig 2; see also page 1351-1352, section Voltage feedback Scheme) coupled to a gain section of the laser for monitoring a gain voltage of the gain section and providing input of the gain voltage to the controller;

wherein the controller controls the front mirror current and the back mirror current to minimize the voltage monitored from the gain section of the laser. (Fig 2; see also page 1351-1352, section Voltage feedback Scheme)

Regarding Claims 2-21, 37-56 and 72- 91, Sarlet et al. discloses 1) the mirror currents aligned with a cavity mode and a DSP as claimed. (Fig 2; see also page 1351-1352, section Voltage feedback Scheme)

Regarding Claims 22-34, 57-69 and 92-104, it is inherent of Sarlet et al. that an analog circuit will be used to condition/monitor the gain voltage. (Fig 2; see also page

1351-1352, section Voltage feedback Scheme) In addition, the voltages are read out by a PC before updating the drivers. The use of a PC requires, inherently, a conversion to digital format. (Fig 2; see also page 1351-1352, section Voltage feedback Scheme)


### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ono et al. (US 5155736), Uchida (US 5757832), Delorme (US 5838714) and Nanbu et al. (US 6052400).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey N Zahn whose telephone number is 703-305-3443. The examiner can normally be reached on M-F: 8:30-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
Jeffrey Zahn  
March 5, 2003